CLAIMS

What is claimed is:

1. A method of preparing a proteoliposome comprising the step of:

contacting a liposome with an effective portion of RLIP76 to create a proteoliposome.

2. The method of claim 1, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof.

3. The method of claim 1 further comprising adding the proteoliposome to one or more toxic compounds.

4. The method of claim 3, wherein one or more toxic compounds reside in at least one of the group consisting of organism, mammalian cell, transfected mammalian cell, bioreactor, soil, water, spill, process waste stream, manufacturing waste chemical waste, laboratory waste, hospital waste, and combinations thereof.

5. The method of claim 3, wherein adding the proteoliposome to one or more toxic compounds reduces the concentration of toxic compounds outside the proteoliposome.

6. The method of claim 3, wherein adding the proteoliposome to one or more toxic compounds protects against further contamination by the one or more toxic compounds.

7. The method of claim 3, wherein adding the proteoliposome to one or more toxic compounds prevents the accumulation of toxic compounds outside the proteoliposome. .

8. The method of claim 3, wherein the toxic compound is selected from the group consisting of crude oil, crude oil fraction, an organic or inorganic chemical compound, radiation, waste products, a chemical solvent, metabolite, metabolic by-product, a chemical warfare agent, drug, drug by-product, chemical by-product, radiation, and combinations thereof.

9. A proteoliposomal composition comprising:

a liposome; and

an effective portion of RLIP76.

10. The proteoliposome of claim 9, wherein the proteoliposome is used to reduce the concentration of toxic compounds on one side of the liposomal membrane.

11. The proteoeliposomal composition of claim 9 further comprising at least one of the group consisting of 4-hydroxynonenal, leukotriene, polychlorinated biphenyls, glutathione, and combinations thereof.

12. The proteoeliposomal composition of claim 9, wherein the effective portion of RLIP76 is dependent on ATP for optimal activity.

13. The proteoeliposomal composition of claim 10, wherein the toxic compound is selected from the group consisting of crude oil, crude oil fraction, an organic or inorganic chemical compound, a chemical solvent, metabolite, metabolic by-product, a chemical warfare agent, drug, drug by-product, chemical by-product, radiation, stress by-product, and combinations thereof.

14. The proteoeliposomal composition of claim 9, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof.

15. The proteoeliposomal composition of claim 9, wherein the proteoeliposomal composition is for the treatment of toxic compound exposure.

16. The proteoeliposomal composition of claim 15, wherein treatment prevents accumulation of one or more toxic compounds outside the proteoliposome..

17. The proteoeliposomal composition of claim 15, wherein treatment with the proteoeliposomal composition reduces the concentration of toxic compounds outside the proteoliposome..

18. The proteoeliposomal composition of claim 15, wherein treatment protects against further contamination by the one or more toxic compounds.

19. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition is capable of being transfected into a bacterial or mammalian cell.

20. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition is capable of having antibodies generated against it.

21. The proteoliposomal composition of claim 9, wherein the effective portion of RLIP76 is capable of having antibodies generated against it.

22. The proteoliposomal composition of claim 21, wherein antibodies raised against the effective portion of RLIP76 and added to the proteoliposomal composition prevent the activity of the effective portion of RLIP76.

23. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition is a nonselective transporter of neutral and charged compounds.

24. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition protects against drug and multidrug resistance.

25. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition modulates cellular signaling and affects cell proliferation.

26. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition modulates cellular signaling and affects cell death.

27. The proteoliposomal composition of claim 9, wherein the effective portion of RLIP76 is an effective portion of recombinant RLIP76.

28. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition is administered to an organism in need thereof and protects the organism from stressors selected at least from the group consisting of heat, oxidant chemicals, chemotherapeutic agents, UV irradiation and X-irradiation, cell damage, waste by-products, and combinations thereof.

29. The proteoliposomal composition of claim 28, wherein administration is selected at least from the group consisting of injection, dermal delivery, infusion, injestion, and combinations thereof.

30. A method of reducing the effects of ionizing radiation comprising the step of:

adding a proteoliposome to a material with ionizing radiation, wherein the proteoliposome is a liposome and an effective portion of RLIP76.

31. The method of claim 30, wherein the proteoliposome is added prior to the ionizing radiation.

32. The method of claim 30, wherein ionizing radiation is at least selected from the group consisting of x-ray radiation, gamma radiation, ultraviolet radiation, thermal radiation, nuclear radiation, and combinations thereof.

33. The method of claim 30, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof.

34. The method of claim 30, wherein the material is at least selected from the group consisting of organism, mammalian cell, transfected mammalian cell, soil, water, spill, process waste stream, manufacturing waste, chemical waste, laboratory waste, hospital waste, and combinations thereof.

35. The method of claim 30, wherein the effective portion of RLIP76 is dependent on ATP for optimal activity.

36. A kit prepared for using the proteoliposomal composition of claim 21 comprising:

an effective dose of a proteoliposome, wherein the proteoliposome is a liposome and an effective portion of RLIP76; and

an instructional pamphlet.

37. The kit of claim 36, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof.

38. The kit of claim 36, wherein the effective portion of RLIP76 is dependent on ATP for optimal activity.

39. The kit of claim 36, wherein the kit is used to reduce the concentration of toxic compounds and their by-products and to enhance resistance to toxic compounds.

40. The kit of claim 36 further comprising an antibody raised against the effective portion of RLIP76.

41. The kit of claim 36 further comprising a means for administering the proteoliposomal composition.

42. The kit of claim 36, wherein the means for administering the proteoliposomal composition is selected at least from the group consisting of injection device, dermal delivery device, infusion device, injestion device, and combinations thereof.

43. A method of enhancing the resistance of one or more cells to one or more toxic compounds comprising the step of:

providing an effective dose of a proteoliposome to one or more cells, wherein the proteoliposome is a liposome and an effective portion of RLIP76.

44. The method of claim 43, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof.

45. The method of claim 43, wherein the effective portion of RLIP76 is dependent on ATP for optimal activity.

46. The method of claim 43, wherein the proteoliposome protects one or more cells from stressors selected at least from the group consisting of heat, oxidant chemicals, chemotherapeutic agents, ionizing radiation, nuclear radiation, thermal radiation, cell damage, waste by-products, and combinations thereof.

47. A method of preparing a proteoliposome comprising the step of:

contacting a liposome with an effective portion of RLIP76 to create a proteoliposome, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof, and wherein the effective portion of RLIP76 is dependent on ATP for optimal activity.

48. A proteoliposomal composition comprising:

a liposome, wherein the liposome is at least selected from the group consisting of lectin, glycolipid, phospholipid, and combinations thereof; and

an effective portion of RLIP76, wherein the effective portion of RLIP76 is dependent on ATP for optimal activity.

49. The proteoliposomal composition of claim 48, wherein the proteoliposomal composition is deliverable to any mammalian organ after administration.

50. The proteoliposomal composition of claim 9 further comprising a gene.

51. The proteoliposomal composition of claim 9, wherein the gene is delivered to a mammalian organ after administration of the proteoliposomal composition.

52. The proteoliposomal composition of claim 9, wherein the proteoliposomal composition is a vehicle for the delivery to the brain of at least of the group consisting of a drug, protein, gene, antisense therapy, and combinations thereof.